



1787 Sentry Parkway West
Building 18, Suite 120
Blue Bell, Pennsylvania 19422
PH 267.464.2800
FAX 267.401.1554
www.geosyntec.com

20 August 2013

Via Email and Federal Express

Ms. Sharon Fang (3H521), Remedial Project Manager
U.S. Environmental Protection Agency – Region III
1650 Arch Street
Philadelphia, PA 19103

Subject: **Addendum to Preliminary (30%) Design Submittal /
Supplemental Pre-Design Investigation (PDI) Work Plan
Operable Unit 2 North Penn Area 5 Superfund Site
Unilateral Administrative Order (UAO)
Docket No. CERCLA-03-2012-0205DC**

Dear Ms. Fang:

At your request, Geosyntec has prepared this letter to present the United States Environmental Protection Agency (USEPA) with a summary of the interim laboratory analytical results from groundwater samples collected during the June and July 2013 pre-design investigation (PDI) of the Operable Unit 2 (OU2) of the North Penn Area 5 (NP5) Superfund Site and to provide USEPA with a description of the Supplemental PDI scope of work necessary to fully delineate trichloroethene (TCE) within the OU2 overburden groundwater aquifer to 100 µg/L, as required by the 26 June 2012 Unilateral Administrative Order (“Order”). USEPA approved our request to extend the PDI period by 90 days to enable the collection of the Supplemental PDI data described herein via letter dated 8 August 2013.

PDI Data Summary

A summary of the laboratory analytical results for volatile organic compounds (VOCs) from the June and July 2013 PDI is presented on Table 1, and a comparison of the USEPA PDI split sample results is provided in Table 2. Iso-concentration contours of PDI analytical results for TCE are plotted on Figure 1. Figure 1 shows that two areas of elevated TCE concentration exist within the OU2 overburden groundwater aquifer based on the PDI results to date; one near the loading dock area of the former Stabilius facility, and the second in the northwestern corner of the former BAE facility.

Ms. Sharon Fang
20 August 2013
Page 2

Scope of Work

Geosyntec proposes to advance a total of five direct push groundwater sampling points (shown as TW41 to TW45 on Figure 1) to complete the delineation of OU2 groundwater TCE west of direct push groundwater sampling points TW34, TW35 and TW36 using methods and procedures consistent with the prior PDI activities. Groundwater samples from locations TW41 to TW45 will be analyzed for volatile organic compounds (VOCs) via USEPA Method 8260B SOM 1.2.

Closing

We will pursue access to the proposed Whistlestop Park sampling locations from the Township of Montgomeryville upon receipt of your approval of this scope of work. We anticipate that the Supplemental PDI field activities can be completed within the first half of September 2013. This field schedule will enable us to finalize and submit the 60% Design Submittal to you on or before 27 November 2013. Please do not hesitate to contact me should you have any questions.

Sincerely,



Derek W. Tomlinson, P.E.
Project Coordinator

Attachment: Figure 1: Location of Proposed Direct Push Groundwater Sampling Points
 Table 1: Pre-Design Investigation (PDI) Groundwater Laboratory
 Analytical Results
 Table 2: Comparison of USEPA Split Samples to PDI Groundwater
 Laboratory Analytical Results

Copies to: Tim Cherry, PADEP (*via email & 1 hardcopy first class mail*)
 M. Joel Bolstein, Esq., FoxRothschild
 Chris Voci, P.G., Geosyntec
 File: PH0013

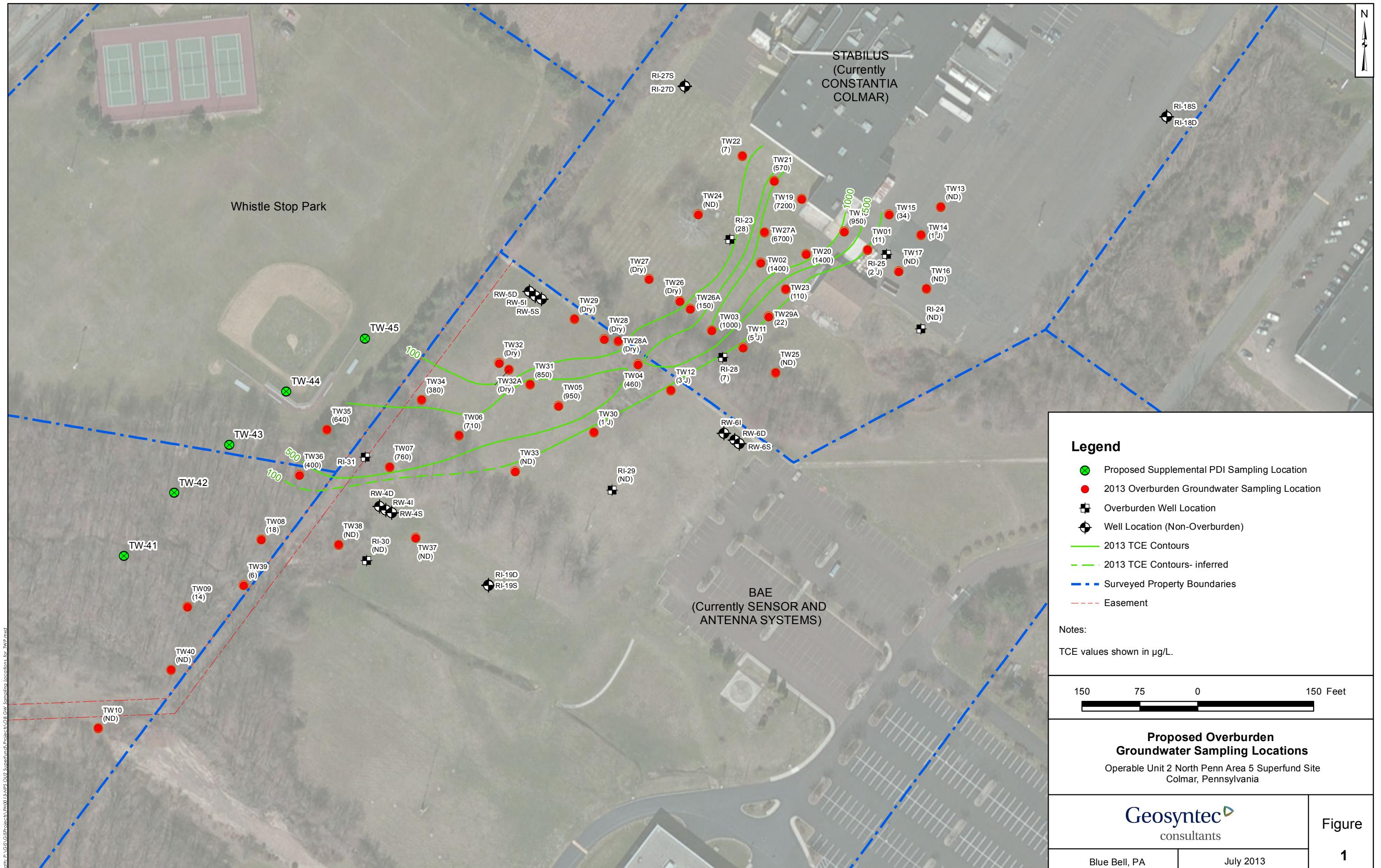


Table 1. Pre-Design Investigation (PDI) Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Station Name	RI23	RI24	RI25	RI28	RI29	RI30	TW01	TW02	TW03	TW04	TW05	TW06	TW07	TW08	TW09	TW10	TW11
Sample Date	6/28/2013	6/28/2013	6/28/2013	6/28/2013	6/27/2013	6/28/2013	6/24/2013	6/25/2013	6/24/2013	6/26/2013	6/25/2013	6/26/2013	6/26/2013	6/26/2013	6/26/2013	6/25/2013	
Field Sample ID	RI23.062813	RI24.062813	RI25.062813	RI28.062813	RI29.062713	RI30.062813	TW01.062413	TW02.062513	TW03.062413	TW04.062613	TW05.062513	TW06.062613	TW07.062613	TW08.062613	TW09.062313	TW10.062813	TW11.062513
VOCs (µg/L)																	
1,1,1-Trichloroethane	0.8 u	1 j	0.8 u														
1,1,2-Tetrachloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,1,2-Trichloroethane	0.8 u																
1,1,2-Trichlorotrifluoroethane (Freon 113)	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
1,1-Dichloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,1-Dichloroethene	0.8 u	2 j	0.8 u														
1,2,3-Trichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2,4-Trichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dibromo-3-chloropropane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
1,2-Dibromoethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dichloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dichloropropane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,3-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,4-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,4-Dioxane	70 u																
2-Hexanone	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u
4-Methyl-2-pentanone	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u
Acetone	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u
Benzene	0.5 u																
Bromochloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Bromodichloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Bromoform	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Bromomethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Carbon disulfide	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Carbon tetrachloride	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Chlorobenzene	0.8 u																
Chloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Chloroform	0.8 u																
Chloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
cis-1,2-Dichloroethene	3 j	0.8 u	0.9 j	270	150	58	140	94	100	1 j	0.8 u	0.8 u					
cis-1,3-Dichloropropene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Cumene (Isopropyl benzene)	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Cyclohexane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Cyclohexane, Methyl-	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Dibromochloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Dichlorodifluoromethane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Ethylbenzene	0.8 u																
Methyl acetate	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u

Table 1. Pre-Design Investigation (PDI) Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Station Name	RI23	RI24	RI25	RI28	RI29	RI30	TW01	TW02	TW03	TW04	TW05	TW06	TW07	TW08	TW09	TW10	TW11
Sample Date	6/28/2013	6/28/2013	6/28/2013	6/28/2013	6/27/2013	6/28/2013	6/24/2013	6/25/2013	6/24/2013	6/26/2013	6/25/2013	6/26/2013	6/26/2013	6/26/2013	6/26/2013	6/28/2013	6/25/2013
Field Sample ID	RI23.062813	RI24.062813	RI25.062813	RI28.062813	RI29.062713	RI30.062813	TW01.062413	TW02.062513	TW03.062413	TW04.062613	TW05.062513	TW06.062613	TW07.062613	TW08.062613	TW09.062313	TW10.062813	TW11.062513
VOCs (µg/L)																	
Methyl ethyl ketone (2-Butanone)	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u
Methyl tert butyl ether	0.5 u																
Methylene chloride	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Styrene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Tetrachloroethene	0.8 u	0.8 j	1 j	0.8 u	1 j	0.8 u	0.8 j	0.8 u	0.8 u	0.8 u	0.8 u						
Toluene	0.7 u																
trans-1,2-Dichloroethene	0.8 u	3 j	1 j	0.8 u	2 j	1 j	0.8 u										
trans-1,3-Dichloropropene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Trichloroethene	28	1 u	2 j	7	1 u	1 u	11	1,400	1000	460	950	710	760	18	14	1 u	5 j
Trichlorofluoromethane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Vinyl Chloride	1 u	1 u	1 u	1 u	1 u	1 u	1 u	2 j	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Xylene (m,p)	0.8 u																
Xylene (o)	0.8 u																
Xylene (Total)	0.8 u																

Notes:

- Not analyzed

J - Estimated value

U - Non-detectable

Table 1. Pre-Design Investigation (PDI) Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Station Name	TW12	TW13	TW14	TW15	TW16	TW17	TW18	TW19	TW20	TW21	TW22	TW23	TW24	TW25	TW26A	TW27A
Sample Date	6/25/2013	6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/18/2013	6/17/2013	6/18/2013	6/20/2013	6/20/2013
Field Sample ID	TW12.062513	TW-13-061813	TW-14-061813	TW-15-061813	TW-16-061813	TW-17-061813	TW-18-061813	TW-19-061713	TW-20-061713	TW-21-061713	TW-22-061713	TW-23-061813	TW-24-061713	TW-25-061813	TW26A-062013	TW27A-062013
VOCs (µg/L)																
1,1,1-Trichloroethane	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
1,1,2,2-Tetrachloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,1,2-Trichloroethane	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
1,1,2-Trichlorotrifluoroethane (Freon 113)	2 u	2 u	2 u	2 u	2 u	2 u	2 u	10 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	20 u
1,1-Dichloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,1-Dichloroethene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	1 j	0.8 u	8 u					
1,2,3-Trichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,2,4-Trichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,2-Dibromo-3-chloropropane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	10 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	20 u
1,2-Dibromoethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,2-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,2-Dichloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,2-Dichloropropane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,3-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,4-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
1,4-Dioxane	70 u	70 u	70 u	70 u	70 u	70 u	70 u	350 u	70 u	70 u	70 u	70 u	70 u	70 u	70 u	700 u
2-Hexanone	3 u	3 u	3 u	3 u	3 u	3 u	3 u	15 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	30 u
4-Methyl-2-pentanone	3 u	3 u	3 u	3 u	3 u	3 u	3 u	15 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	30 u
Acetone	6 u	6 u	16 j	6 u	6 u	6 u	6 u	30 u	6 u	12 j	6 u	6 u	6 j	6 u	6 u	60 u
Benzene	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	3 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	5 u
Bromochloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Bromodichloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Bromoform	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Bromomethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Carbon disulfide	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Carbon tetrachloride	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Chlorobenzene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
Chloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Chloroform	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
Chloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
cis-1,2-Dichloroethene	0.8 u	0.8 u	0.8 u	5	0.8 u	0.8 u	190	410	240	110	0.8 u	10	0.8 u	0.8 u	13	490
cis-1,3-Dichloropropene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Cumene (Isopropyl benzene)	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Cyclohexane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	10 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	20 u
Cyclohexane, Methyl-	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Dibromochloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Dichlorodifluoromethane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	10 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	20 u
Ethylbenzene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
Methyl acetate	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u

Table 1. Pre-Design Investigation (PDI) Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Station Name	TW12	TW13	TW14	TW15	TW16	TW17	TW18	TW19	TW20	TW21	TW22	TW23	TW24	TW25	TW26A	TW27A
Sample Date	6/25/2013	6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/18/2013	6/17/2013	6/18/2013	6/20/2013	6/20/2013
Field Sample ID	TW12.062513	TW-13-061813	TW-14-061813	TW-15-061813	TW-16-061813	TW-17-061813	TW-18-061813	TW19-061713	TW20-061713	TW21-061713	TW22-061713	TW23-061813	TW24-061713	TW25-061813	TW26A-062013	TW27A-062013
VOCs (µg/L)																
Methyl ethyl ketone (2-Butanone)	3 u	3 u	3 u	3 u	3 u	3 u	3 u	15 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	30 u
Methyl tert butyl ether	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	3 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	5 u
Methylene chloride	2 u	2 u	2 u	2 u	2 u	2 u	2 u	10 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	20 u
Styrene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Tetrachloroethene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	2 j	4 u	4 j	3 j	0.8 u	8 u				
Toluene	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	4 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	7 u
trans-1,2-Dichloroethene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	3 j	5 j	4 j	1 j	0.8 u	8 u				
trans-1,3-Dichloropropene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Trichloroethene	3 j	1 u	1 j	34	1 u	1 u	950	7,200	1,400	570	7	110	1 u	1 u	150	6,700
Trichlorofluoromethane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	10 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	20 u
Vinyl Chloride	1 u	1 u	1 u	1 u	1 u	1 u	6	5 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	10 u
Xylene (m,p)	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
Xylene (o)	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u
Xylene (Total)	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	4 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	8 u

Notes:

-- Not analyzed

J - Estimated value

U - Non-detectable

Table 1. Pre-Design Investigation (PDI) Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Station Name	TW29A	TW30	TW31	TW33	TW34	TW35	TW36	TW37	TW38	TW39	TW40
Sample Date	6/21/2013	6/20/2013	6/20/2013	6/20/2013	6/20/2013	6/19/2013	6/19/2013	6/19/2013	6/20/2013	6/19/2013	6/19/2013
Field Sample ID	TW29A-062113	TW30-062013	TW31-062013	TW33-062013	TW34-062013	TW35-061913	TW36-061913	TW37-061913	TW38-062013	TW39-061913	TW40-061913
VOCs (µg/L)											
1,1,1-Trichloroethane	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
1,1,2,2-Tetrachloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,1,2-Trichloroethane	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
1,1,2-Trichlorotrifluoroethane (Freon 113)	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
1,1-Dichloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,1-Dichloroethene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
1,2,3-Trichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2,4-Trichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dibromo-3-chloropropane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
1,2-Dibromoethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dichloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,2-Dichloropropane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,3-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,4-Dichlorobenzene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
1,4-Dioxane	70 u	70 u	70 u	70 u	70 u	70 u	70 u	70 u	70 u	70 u	70 u
2-Hexanone	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u
4-Methyl-2-pentanone	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u
Acetone	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u	6 u
Benzene	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u
Bromochloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Bromodichloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Bromoform	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Bromomethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Carbon disulfide	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Carbon tetrachloride	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Chlorobenzene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
Chloroethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Chloroform	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
Chloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
cis-1,2-Dichloroethene	2 j	0.8 u	110	0.8 u	57	82	50	0.8 u	0.8 u	0.8 u	0.8 u
cis-1,3-Dichloropropene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Cumene (Isopropyl benzene)	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Cyclohexane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Cyclohexane, Methyl-	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Dibromochloromethane	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Dichlorodifluoromethane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Ethylbenzene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
Methyl acetate	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u

Table 1. Pre-Design Investigation (PDI) Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Station Name	TW29A	TW30	TW31	TW33	TW34	TW35	TW36	TW37	TW38	TW39	TW40
Sample Date	6/21/2013	6/20/2013	6/20/2013	6/20/2013	6/20/2013	6/19/2013	6/19/2013	6/19/2013	6/20/2013	6/19/2013	6/19/2013
Field Sample ID	TW29A-062113	TW30-062013	TW31-062013	TW33-062013	TW34-062013	TW35-061913	TW36-061913	TW37-061913	TW38-062013	TW39-061913	TW40-061913
VOCs (µg/L)											
Methyl ethyl ketone (2-Butanone)	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u	3 u
Methyl tert butyl ether	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u	0.5 u
Methylene chloride	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Styrene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Tetrachloroethene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
Toluene	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u
trans-1,2-Dichloroethene	0.8 u	0.8 u	0.9 j	0.8 u	1 j	0.8 u					
trans-1,3-Dichloropropene	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Trichloroethene	22	1 j	850	1 u	380	640	400	1 u	1 u	6	1 u
Trichlorofluoromethane	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u	2 u
Vinyl Chloride	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u	1 u
Xylene (m,p)	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
Xylene (o)	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u
Xylene (Total)	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u

Notes:

-- Not analyzed

J - Estimated value

U - Non-detectable

TABLE 2
Comparison of USEPA Split Samples to PDI Groundwater Laboratory Analytical Results
Operable Unit 2 North Penn Area 5 Superfund Site - Colmar, PA

Location	Compound	USEPA Result (ug/L)	Geosyntec Result (ug/L)	Percent Relative Difference (%)
TW-01	cis-1,2-dichloroethene	1.1	0.9	20.0
	trichloroethene	15	11	30.8
TW-04	trans-1,2-dichloroethene	0.57	0.8	33.6
	cis-1,2-dichloroethene	49	58	16.8
	trichloroethene	440	460	4.4
TW-06	trans-1,2-dichloroethene	0.87	1	13.9
	cis-1,2-dichloroethene	96	94	2.1
	trichloroethene	680	710	4.3
TW-07	trans-1,2-dichloroethene	1.4	0.8	54.5
	cis-1,2-dichloroethene	99	100	1.0
	trichloroethene	830	760	8.8
TW-09	trichloroethene	13	14	7.4
TW-14	trichloroethene	1.1	1	9.5
TW-18	trans-1,2-dichloroethene	11	3	114.3
	cis-1,2-dichloroethene	170	190	11.1
	trichloroethene	1000	950	5.1
	tetrachloroethene	2.9	2	36.7
	v vinyl chloride	6.1	6	1.7
TW-19	trans-1,2-dichloroethene	12	5	82.4
	cis-1,2-dichloroethene	480	410	15.7
	trichloroethene	10000	7200	32.6
TW-26A	cis-1,2-dichloroethene	13	13	0.0
	trichloroethene	150	150	0.0
TW-31	cis-1,2-dichloroethene	91	110	18.9
	trichloroethene	760	850	11.2
TW-35	trans-1,2-dichloroethene	1.3	0.8	47.6
	cis-1,2-dichloroethene	63	82	26.2
	trichloroethene	530	640	18.8
TW-38	trichloroethene	0.58	1	53.2
RI-23	cis-1,2-dichloroethene	3.4	3	12.5
	trichloroethene	27	28	3.6

0.8

Location was non-detect, reporting limit shown and used in the ratio calculation.